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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/903,868	07/13/2001	Akira Nakamura	P103213-00032	9617
4372	7590	03/26/2004	EXAMINER	
ARENT FOX KINTNER PLOTKIN & KAHN 1050 CONNECTICUT AVENUE, N.W. SUITE 400 WASHINGTON, DC 20036			SNIEZEK, ANDREW L	
			ART UNIT	PAPER NUMBER
			2651	8
DATE MAILED: 03/26/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/903,868

Applicant(s)

NAKAMURA, AKIRA

Examiner

Andrew L. Sniezek

Art Unit

2651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2,3,5-9,11-15 and 17 is/are rejected.
- 7) ☒ Claim(s) 4,10 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

The following action is taken in view of the amendment filed 12/30/03 and subsequent updated search. The information disclosure statement filed 12/30/03 has been considered.

#### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 2, 3, 5-7, 9, 11 are rejected under 35 U.S.C. 102(e) as being anticipated by

Tsuyuguchi.

It is noted that the independent claims are not limited to any specific motor arrangement (spindle drive motor or actuator drive motor). Tsuyuguchi teaches a motor driving device comprising a motor (15), a motor driver (7) including current control circuit (20) which limits the current to the motor below a limit value ( $I_p$ ) and additionally contains a current control transistor (acting as a resistor) to have its resistance changed to vary the current sent to the motor (column 8, lines 6-51). Concerning claim 3; Tsuyuguchi teaches that the stepping motor current is held constant at three different states depending upon the consumption of current by the spindle motor (column 7, lines 15-56). The limitations of claim 5 are satisfied by the discussion in columns 1 and 2 along with column 6, lines 1-7. The limitations of claim 6 are taught in figure 1.

Concerning claim 7; Tsuyuguchi teaches a motor driving device including a motor(2) for driving a spindle, a motor drive circuit (3) and a resistor (12) that is provided in line between a power source and the motor. As shown by figure 2 along with the corresponding disclosure the motor driver circuit limits the current to the motor (this current is not unlimited beyond what is capable of being supplied) is such a way that the voltage across the resistor is kept below a predetermine voltage (again the voltage across this resistor is not unlimited beyond a maximum amount due to the power constraints of the system). Also the current is fed back across resistor as shown in figure 2. Concerning claim 9, depending upon the weight class of the disk used, the limit value is brought down. The limitations of claim 11 are discussed in columns 1-2 and column 6, lines 1-7.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-9, 11-15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuyuguchi.

The following rejections of claims 7-9, 11 and 12 are made assuming that the motor discussed by the claims is a stepping motor as specifically set forth in claim 12. Tsuyuguchi teaches a stepping motor (15), a motor driving circuit (7) a transistor (61) that is used to limit the current supplied to the stepping motor as discussed in column 7, lines 15-56. Claim 7 specifically sets forth that a resistor is used for the element that limits the current. Claim 8 states

that the resistor is variable. Tsuyuguchi teaches a transistor for this purpose however discloses that this transistor functions as a variable resistor (column 8, line 13). It would have been obvious to one of ordinary skill in the art of electronics, given the teaching of Tsuyuguchi, to modify the circuit arrangement as disclosed by replacing the transistor with a variable resistor without changing the operation of the device. The voltage across the resistor would be kept below a predetermined voltage by making such replacement due to the current flowing through the resistor and the value of the resistance. The limitations of claims 9 and 11 have been already discussed. Claims 13-15 and 17 contain similar limitations that satisfied by the applied art as stated. Claim 13 additionally sets forth a head for writing and reading to a disk which is deemed satisfied by elements (4 and 5).

***Allowable Subject Matter***

Claims 4, 10 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:  
The claimed limitations of adjusting the limit value above a value required to drive the motor so that the motor is driven in a saturated state is neither taught by nor an obvious variation of the art of record.

***Response to Arguments***

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

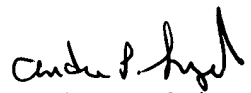
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew L. Sniezek whose telephone number is 703-308-1602. The examiner can normally be reached on Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 703-308-4825. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

  
Andrew L. Sniezek  
Primary Examiner  
Art Unit 2651

A.L.S.  
March 20, 2004